

PTO/SBA/7 (11-02) Approved for use through 10/31/01 OMB 0651-0032 FEE TRANSMITTAL for FY 2003 Patent Fees are subject to annual revision. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. TOTAL AMOUNT OF PAYMENT: (\$320.00)		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Application Number</td> <td>09/28,916</td> </tr> <tr> <td>Filing Date</td> <td>February 28, 2000</td> </tr> <tr> <td>First Named Inventor</td> <td>Andreas Metelski et al</td> </tr> <tr> <td>Examiner Name</td> <td>Steven M. Marsh</td> </tr> <tr> <td>Group/Art Unit</td> <td>3632</td> </tr> <tr> <td>Attorney Docket Number</td> <td>33997.0011</td> </tr> </table>		Application Number	09/28,916	Filing Date	February 28, 2000	First Named Inventor	Andreas Metelski et al	Examiner Name	Steven M. Marsh	Group/Art Unit	3632	Attorney Docket Number	33997.0011
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SIGNATURE: TYPE: George L. Snyder, Jr. Reg. No. 37,729 DATE: November 27, 2002 Telephone: (716) 848-1545	
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I hereby Certify that this Correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on November 27, 2002.

Barbara Haggerty
Name

Signature

November 27, 2002
Date of Signature

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Attorney Docket No. : 33997.0011

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Group Art Unit : 3632
Examiner : Steven M. Marsh

In re application of : Andreas METELSKI et al.
Serial No. : 09/423,916
Filing Date : February 28, 2000
Title : MICROSCOPE STAND,
ESPECIALLY FOR A
SURGICAL MICROSCOPE

**APPEAL
BRIEF**

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GROUP 3600

Commissioner for Patents
Washington, DC 20231

I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Barbara Haggerty

Name of person signing the certification

Barbara Haggerty
Signature

November 27, 2002
Date

Sir:

Herewith is Appellants' Appeal Brief, in triplicate, together with a check in the amount of \$320.00 as payment of the fee for filing the Appeal Brief.

The Commissioner is hereby authorized to charge any additional fees due, or credit any overpayments, to Deposit Account 08-2442.

I. REAL PARTY IN INTEREST

All rights in the present application are assigned to Leica Microsystems AG, a corporation organized under the laws of Switzerland and having a place of business at Heinrich-Wild-Strasse, CH-9435 Heerbrugg, Switzerland. Leica Microsystems AG is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to applicants, the applicants' legal representatives, or the assignee which will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 14-45 are pending in the present application.

Claim 43 contains allowable subject matter, but is objected to as being dependent upon a rejected base claim.

Claims 14-42, 44 and 45 are under final rejection, from which rejection this appeal is taken.

IV. STATUS OF AMENDMENTS

A Request for Reconsideration was filed on August 13, 2002. No amendments have been made subsequent to the Final Rejection dated July 16, 2002. The claims in their form as finally rejected by the Examiner are set forth in the attached Appendix.

V. SUMMARY OF THE INVENTION

The present invention is a microscope stand, especially for surgical microscopes. A surgical microscope is mounted on a stand to allow the microscope to be positioned with respect to a patient during surgery. These stands, by design, have great weight to aid in stability of the

microscope. Typically, such stands comprise a plurality of connected support members for bearing the load of the microscope and accessory equipment and enabling pivotal adjustment of the microscope about various axes for selective positioning of the microscope as necessary.

An object of the present invention is to reduce the weight of the microscope stand while maintaining good stability, improving mobility, and providing greater radii of action around the stand. Specification at page 2, lines 5-10. Another object of the present invention is to dampen vibrations in an optimal manner to keep the microscope from oscillating. Specification page 3, lines 21-23. To achieve these objects, a microscope stand of the present invention includes at least one support member having first and second concentric tubes formed from a first material and a second material, respectively. The first and second materials have substantially different moduli of elasticity and contribute to the vertical section modulus of the stand. Specification at page 4, lines 7-9. In a preferred embodiment, one of the first and second materials is fiber-reinforced plastic, and the other is metal with a comparatively low modulus of elasticity relative to that of the fiber reinforced plastic. Specification at page 4 line 27 - page 5, line 8; and page 15, lines 26. By using two materials with different bending properties in a concentric tube arrangement, excellent strength is achieved with a lightweight support member that is simple to manufacture, and vibration damping characteristics of the support member are improved.

The weight of the base of the stand can also be reduced while maintaining high strength. Specification page 7, lines 10-11. The base is made of an upper and a lower plate which sandwich a honeycomb structure. Specification at page 7, lines 17-18, and page 14, line 28 - page 15, line 6. This design provides a stable, light structure. Specification at page 7, lines 23-24. The base also has a plurality of wheels or feet and a damping layer associated therewith for reducing transmission of vibrations from the floor through to the base. Specification at page 8, lines 2-4, and page 13, line 27 - page 14, line 1. The wheels or feet are raised/lowered simultaneously with a single operation by a positioning means in the form of a common chain

drive working with toothed gears connected to screws. Specification at page 8, lines 11-13, and page 14, lines 15-20.

VI. ISSUES

1) Whether the Examiner's rejection of claims 14-39, 44 and 45 under 35 U.S.C. 103(a) as being obvious over Tigliev (US Patent No. 5,609,316) in view of Motoda (US Patent No. 3,850,307) and in further view Schaefer et al. (US Patent No. 5,425,068) should be reversed.

2) Whether the Examiner's rejection of claims 40 and 41 under 35 U.S.C. 103(a) as being obvious over Tigliev (US Patent No. 5,609,316) in view of Motoda (US Patent No. 3,850,307) in view of Schaefer et al. (US Patent No. 5,425,068) and in further view of Yamauchi et al. (US Patent No. 4,690,960) should be reversed.

3) Whether the Examiner's rejection of claim 42 under 35 U.S.C. 103(a) as being obvious over Tigliev (US Patent No. 5,609,316) in view of Motoda (US Patent No. 3,850,307) in view of Schaefer et al. (US Patent No. 5,425,068) and in further view of Hoppl et al. (US Patent No. 3,637,233) should be reversed.

VII. GROUPING OF CLAIMS

Claims 14-29, 31-39, 44, and 45 stand or fall together.

Claim 30 stands or falls on its own.

Claims 40 and 41 stand or fall together.

Claim 42 stands or falls on its own.

VIII. ARGUMENT

First Issue

Claims 14-39, 44 and 45 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tigliev (US Patent No. 5,609,316) in view of Motoda (US Patent No. 3,850,307) and in further view Schaefer et al. (US Patent No. 5,425,068). The rejection should be reversed because the references, taken as a whole, do not teach or suggest a microscope stand comprising a support member including first and second concentric tubes, much less such a stand wherein the concentric tubes are respectively formed of first and second materials having substantially different moduli of elasticity and contributing to the vertical section modulus of the stand as required by Claim 14.

The rejection relies on Tigliev to show a microscope stand having a plurality of support members (see Final Office Action dated July 16, 2002 at page 2, paragraph 3). The rejection refers to Motoda for its teaching of a support member (36) that is tubular and has an “internal structure” (see Final Office Action at page 2, paragraph 3 continuing to page 3).

The rejection goes on to reason that “[i]t would have been obvious to one of ordinary skill in the art at the time of the present invention to have provided a tubular support member on the apparatus taught by Tigliev, as taught by Motoda, for the purpose of allowing an internal structure to be provided in one of the support members.” (Final Office Action at top of page 3). The cited support member (36) of Motoda is a neck portion connecting a control box 35 to the lower end of a carrier 22 that is a distal link in an elongated parallelogram linkage. Please see Motoda at column 3, lines 29-31 and 50-53, and Fig. 1. The Final Office Action refers to support member (36) as having “an internal structure,” however the nature of the internal structure is never described in the reference. One of ordinary skill in the art might conclude that support member (36) is a hollow tube that possibly carries electrical lines from control box (35),

however beyond this the reference offers no description of the internal structure of support member (36). Moreover, support member (36) is a vertical support member that is loaded in tension by a weight (elements 35, 57, and 37) suspended from its lower end, and is not subjected flexural stress. Thus, the unspecified material of member (36) does not experience a bending moment that would make an associated vertical section modulus a parameter of concern for someone skilled in the art. Applicants respectfully contend that Motoda merely shows that simple tubular support members were known at the time of the present invention.

However, the rejection then relies on Schaefer et al. to reach a conclusion that “[i]t would have been obvious to one of ordinary skill in the art at the time of the present invention to have used a composite structure tube of aluminum and fiber reinforced plastic ... instead of the tubular support member taught by Tigliev in view of Motoda ...”. (Final Office Action at page 3, first complete paragraph. Notably, Schaefer et al. fails to disclose or suggest concentrically arranged tubes in a microscope stand support member. Fig. 3 of Schaefer et al. shows an arcuate support member or “C-bend” 5 (see Fig. 1) in cross-section. The C-bend includes an aluminum extruded profile 14 that is non-tubular, and that has a small cross-section allowing it to be rolled and formed into an arc in a cost-efficient manner. Two generally U-shaped fiber-reinforced plastic covers 12 have their free edges coupled to opposite sides of the aluminum extrusion 14 in symmetrical fashion to surround all but the outer edges of aluminum extrusion 14. The aluminum extrusion 14 has a small cross-section so that it can be cost beneficially rolled into an arc; the plastic covers 12 surround the aluminum extrusion for absorbing anticipated loads. Please see Schaefer et al. at column 3, lines 7-20. Thus, Schaefer et al. teaches an inner structure for shape, and an outer structure for strength, neither of which is tubular as claimed by the Applicants. Moreover, there is no suggestion in any of the references of combining a simple tubular member of Motoda with another tubular member in concentric arrangement and wherein the two tubular members have substantially different moduli of elasticity.

Simply stated, the three references relied upon in the rejection are silent as to using a tube within a tube in a concentric arrangement. The references, taken as a whole, might possibly suggest placing a non-tubular aluminum extrusion like that of Schaefer et al. inside a fiber-reinforced plastic tube, however this is far different from the claimed invention and would yield a support member having different bending properties depending upon the orientation of the non-tubular extrusion with respect to a direction of loading.

Claim 30 is separately patentable because the aluminum extrusion 14 and pair of plastic covers 12 of Schaefer et al. are not connected in a manner that is elastic to thrust loading as claimed. As mentioned in the specification at page 15, lines 27-28, the connection between the two tubes may be elastic to thrust, so that slight relative axial movements, preferably damped by friction, are possible. The C-bend of Schaefer et al. does not suggest such a construction. Therefore, it is believed that Claim 30 is separately patentable.

In view of the foregoing, it is respectfully urged that claim 14, and claims 15-39, 44, and 45 depending therefrom, are patentable over the cited references. Favorable reconsideration of these claims and reversal of the rejection is respectfully requested.

Second Issue

Claims 40 and 41 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tigliev (US Patent No. 5,609,316) in view of Motoda (US Patent No. 3,850,307) in view of Schaefer et al. (US Patent No. 5,425,068) and in further view of Yamauchi et al. (US Patent No. 4,690,960). The rejection should be reversed for the reasons stated above with respect to the *First Issue* and independent Claim 14, from which Claims 40 and 41 depend. Favorable reconsideration of Claims 40 and 41 and reversal of the rejection is respectfully requested.

Third Issue

Claim 42 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Tigliev (US Patent No. 5,609,316) in view of Motoda (US Patent No. 3,850,307), in view of Schaefer et al. (US Patent No. 5,425,068) and in further view of Hoppl et al. (US Patent No. 3,637,233). The rejection should be reversed for the reasons stated above with respect to the *First Issue* and independent Claim 14, from which Claim 42 depends. Favorable reconsideration of Claim 42 and reversal of the rejection is respectfully requested.

IX. CONCLUSION

For the reasons set forth above, it is submitted that Claims 14-42, 44 and 45 are patentable over the prior art of record. It is respectfully asked that the rejections under 35 U.S.C. 103(a) be reversed.

Respectfully submitted,
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Enclosures: Appendix of Claims on Appeal

X. APPENDIX

Claims on appeal:

14. A microscope stand comprising a plurality of support members, at least one of said plurality of support members including first and second concentric tubes formed of first and second materials, respectively, said first and second materials having substantially different moduli of elasticity and contributing to the vertical section modulus of said stand.

15. The microscope stand according to claim 14, wherein one of said first and second materials is fiber-reinforced plastic, and another of said first and second materials is metal with a comparatively low modulus of elasticity relative to that of said one of said first and second materials.

16. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes thermoplastic.

17. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes duroplastic.

18. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes thermosetting plastic.

19. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes carbon fibers.

20. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes aramid fibers.

21. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes glass fibers.

22. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes mineral fibers.

23. The microscope stand according to claim 15, wherein said fiber-reinforced plastic includes polyamide fibers.

24. The microscope stand according to claim 15, wherein said metal is aluminum.

25. The microscope stand according to claim 15, characterized in that said fibers are oriented by at least one winding method chosen from the group of winding methods consisting of: filament winding, braided tube winding, cloth and non-woven fabric winding.

26. The microscope stand according to claim 25, wherein said fibers are oriented unidirectionally.

27. The microscope stand according to claim 25, wherein said fibers are oriented at zero angle relative to a longitudinal axis of said support member.

28. The microscope stand according to claim 14, wherein said first material and said second material are rigidly connected to each other.

29. The microscope stand according to claim 28, wherein said first material and said second material are rigidly connected to each other by cementing.

30. The microscope stand according to claim 28, wherein said first material and said second material are rigidly connected to each other so that they are thrust-elastically damped.

31. The microscope stand according to claim 15, further including at least one interface for providing a stress-free connection between adjacent parts of said stand.

32. The microscope stand according to claim 31, wherein said at least one interface divides at least one of said plurality of support members into a pair of support member segments.

33. The microscope stand according to claim 32, wherein said at least one support member divided by said interface is said at least one support member including first and second concentric tubes.

34. The microscope stand according to claim 31, wherein said at least one interface is metallic.

35. The microscope stand according to claim 31, wherein a damping layer is provided at said at least one interface.

36. The microscope stand according to claim 35, wherein said damping layer includes a mixed-cell foam of an elastomeric material.

37. The microscope stand according to claim 14, further comprising a base having a plurality of wheels, wherein a damping layer is provided between said base and each of said plurality of wheels.

38. The microscope stand according to claim 14, further comprising a base having a plurality of positioning feet.

39. The microscope stand according to claim 38, wherein a damping layer is provided between said positioning feet and the floor on which said microscope stand resides.

40. The microscope stand according to claim 14, further comprising a base including a lower plate and an upper plate, wherein said lower plate and said upper plate are separated by a honeycomb structure cemented in place.

41. The microscope stand according to claim 40, wherein said lower and upper plates are rigidly fastened together at at least one point.

42. The microscope stand according to claim 38, further comprising a positioning means for simultaneously lowering said plurality of feet.

44. The microscope stand according to claim 14, wherein said at least one support member is prestressed in its axial direction.

45. The microscope stand according to claim 44, wherein said prestressing is produced by a central tensioning element which is stressed in tension with respect to said at least one support member.